

**CHESTERFIELD COUNTY
PURCHASING DEPARTMENT
CHESTERFIELD, VIRGINIA
(804) 748-1617
August 8, 2003**



REQUEST FOR PROPOSAL #03-589-8892

**PROFESSIONAL ENGINEER TO PROVIDE THE SERVICES
OF AN INDEPENDENT COMMISSIONING AGENT
FOR THE CHESTERFIELD COUNTY
COMMUNITY DEVELOPMENT BUILDING**

DUE: September 8, 2003

*Request For Proposal Prepared By
Donna R. Clarke, CPPB
Senior Contract Administrator
Purchasing Department*

www.co.chesterfield.va.us/ManagementServices/Purchasing/purchase.asp

The County of Chesterfield (County) hereby solicits qualified and interested firms (Contractor) to submit proposals and statements of qualifications for Professional Engineer to Provide the Services of an Independent Commissioning Agent for the Chesterfield County Community Development Building.

1. GENERAL TERMS AND CONDITIONS OF THE REQUEST FOR PROPOSAL

- 1.1 Submittals, in **four (4)** copies, marked "**Professional Engineer to Provide the Services of an Independent Commissioning Agent for the Chesterfield County Community Development Building**" will be received no later than **5:00 P.M.**, Local Time Prevailing, on **September 8, 2003**, in:

Chesterfield County Purchasing Department
Administration Building, Room 402, Fourth Floor
9901 Lori Road
P. O. Box 51
Chesterfield, VA 23832-0051

- 1.2 Should you decide to utilize an express delivery service, please note that we are located at the Intersection of Ironbridge Road (State Route 10) and Lori Road. **Proposals will not be accepted via Fax machine or Internet E-mail.**
- 1.3 Mark outside of envelope with **RFP #03-589-8892** and proposal subject, "**Professional Engineer to Provide the Services of an Independent Commissioning Agent for the Chesterfield County Community Development Building.**"
- 1.4 Time is of the essence and any proposal or addenda pertaining thereto received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. It is the sole responsibility of the offeror for ensuring that their proposals are stamped by Purchasing Department personnel before the deadline indicated in Section 1.1. Proposals and/or any addenda pertaining thereto, received after the announced time and date of receipt, by mail or otherwise, will be returned. However, nothing in this RFP precludes the County from requesting additional information at any time during the procurement process.
- 1.5 In the event that Chesterfield County is closed due to inclement weather and/or emergency situations prior to or at the time set aside for receipt of proposals, the published due date will default to the next open business day at the same time.
- 1.6 If you are an individual with a disability and require a reasonable accommodation, please notify the Purchasing Department at (804) 748-1617, three working days prior to need.
- 1.7 Nothing herein is intended to exclude any responsible firm or in any way restrain or restrict competition. On the contrary, all responsible firms are encouraged to submit proposals. The County of Chesterfield reserves the right to award in part or in whole or to reject any or all proposals. Any requirements listed herein are intended to describe qualifications, certifications and/or experience considered to be vital and should be used as guidelines for proposal submission. Firms not meeting specific requirements listed herein are encouraged to list and/or demonstrate alternate qualifications, certifications and/or experience for consideration.
- 1.8 Any proposal submitted **MUST** include the Signature Sheet which has been signed by an individual authorized to bind the offeror. All proposals submitted without such signature may be deemed non-responsive.

- 1.9 RFP Process: Offerors are to submit written proposals which present the offeror's qualifications and understanding of the work to be performed. The offeror's proposal should be prepared simply and economically and should provide all the information which it considers pertinent to its qualifications for the project and which respond to the Scope of Services and Evaluation Criteria listed herein. Emphasis should be placed on completeness of services offered and clarity of content.
- 1.10 For information pertaining to the award on this procurement transaction, bidders and/or offerors may access public notification electronically at www.co.chesterfield.va.us/ManagementServices/Purchasing/purchase.asp.
- 1.11 If you desire not to respond to this proposal, please forward your acknowledgment of **NO PROPOSAL SUBMITTED** to the above address. Failure to comply may be cause for removal of your company's name from the vendor list for subject commodity.
- 1.12 Proprietary Information: Section 2.2-4342 F of the *Code of Virginia* states: "Trade secrets or proprietary information submitted by a bidder, offeror, or contractor in connection with a procurement transaction or prequalification application submitted pursuant to subsection B of §2.2-4317 shall not be subject to the Virginia Freedom of Information Act (§2.2-3700 et seq.); however, the bidder, offeror or contractor shall (i) invoke the protections of this section prior to or upon submission of the data or other materials, (ii) identify the data or other materials to be protected, and (iii) state the reasons why protection is necessary."
- 1.13 Total Quality Improvement Initiative: In order to continuously improve the efficiency and effectiveness of all public services provided, Chesterfield County has adopted and implemented the TOTAL QUALITY concept in its approach to organizational management. Listed herein for all prospective offerors to the County is an overview of the County's TOTAL QUALITY IMPROVEMENT (TQI) initiative. Offerors should review this information in order to familiarize themselves with the management philosophies and environment of the County prior to responding to request for proposals.

Chesterfield County is a leader in the application of innovative and successful management approaches. The County's leadership has resulted in numerous awards and broad recognition of the County and its employees. A constantly growing demand for additional and enhanced services has prompted the County to seek even higher levels of innovation and service excellence.

The TQI initiative is led by front line workers, supervisors, department directors, and the County's Leadership Group. Their intensive involvement in quality improvement demonstrates the County's commitment to the TQI values and principles of the initiative.

The TQI initiative includes specific guidelines for values and principles regarding the involvement of every employee within the organization. Implementation of TQI demonstrates the County's commitment to the importance of each individual.

A high standard of ethics, fairness, integrity, trust, responsibility, and creativity are integral concepts of the TQI Initiative. Adherence to these values is expected of all employees of the County, and the County, therefore, expects that all vendors will strive for and continuously improve their customer service.

- 1.14 The County's Definition of Total Quality Improvement: TQI is the employee, customer, and team oriented approach to work, problem solving, and decision making that depends upon individual employee commitment to improving work processes through the analysis and utilization of data.
- 1.15 Chesterfield County's TQI Mission Statement: Providing a first choice community through excellence in public service. To achieve excellence, all employees of the County will participate in the continuous evaluation and quality improvement of our services in order to meet or exceed customer expectations.
- 1.16 Commitment to Diversity and Chesterfield Businesses: Chesterfield County is a rapidly growing progressive community consisting of an increasingly diverse population. This diversity provides for a dynamic and robust community that promotes growth. Chesterfield County believes that all of its citizens should benefit from this economic growth without regard to race, color, religion or economic status.

The county is committed to increasing the opportunities for participation of minority business enterprises, woman-owned businesses and businesses located in Chesterfield County to ensure diversity in its procurement and contract activities. These businesses are encouraged to respond to all Invitations for Bids and Requests for Proposals. In addition, the county strongly encourages each contractor and/or supplier with which the county contracts to actively solicit minority business enterprises, woman-owned businesses and businesses located in the county as subcontractors/suppliers for their projects.

Upon award/renewal of the contract, the successful bidder/offeror shall furnish data requested on the Certification of Subcontractor/Supplier Activity form included in this IFB/RFP document. This information will enable the county to document the dollar level of activity and measure the success of its purchasing and contracting efforts in this endeavor.

- 1.17 Definitions - For purposes of Chesterfield County's classification and reporting program, in cooperation with the Virginia Department of Minority Business Enterprise, the following definitions apply:

Woman-Owned Business (WOB) - a business concern that is majority owned by a woman who also controls and operates the business. In this context, "control" means exercising the power to make policy decisions, and "operate" means being actively involved in the day-to-day management.

Minority Business Enterprise (MBE) - a business enterprise that is owned and controlled by one or more socially and economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: African Americans, Asian Americans, Native Americans, Eskimos and Aleuts. (Reference: 2.1-6432.1 of the *Code of Virginia*)

Chesterfield Business (CB) – any private business enterprise, located within the jurisdictional boundaries of Chesterfield County.

Minority - a person who is a citizen of the United States or a legal resident alien and who satisfies one or more of the following:

Asian Americans - all person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands including but not limited to Japan, China, Vietnam, Korea, Samoa, Laos, Cambodia, Taiwan, northern Marinas, the Philippines, U.

S. territory of the Pacific, India, Pakistan, Bangladesh and Srilanka and who are regarded as such by the community of which these persons claim to be a part.

African Americans - all persons having origins in any of the original peoples of Africa and who are regarded as such by the community of which these persons claim to be a part.

Hispanic Americans - all persons having origins in any of the Spanish-speaking peoples of Mexico, South or Central American, or the Caribbean Islands or other Spanish or Portuguese cultures and who are regarded as such by the community of which these persons claim to be a part.

Native Americans - all persons having origins in any of the original peoples of North America and who are regarded as such by the community of which these persons claim to be a part or who are recognized by a tribal organization.

Eskimos and Aleuts - all persons having origins in any part of Northern Canada, Greenland, Alaska, and Eastern Siberia and who are regarded as such in the community of which these persons claim to be a part.

Members of other groups - all other individuals found to be socially and economically disadvantaged by the United States Small Business Administration under Section 8(a) of the Small Business Act (15USC637)[a]. (VR486-01-02; September 9, 1992)

2. SELECTED TERMS AND CONDITIONS OF THE CONTRACT

- 2.1 Non-Appropriations: The continuation of the terms, conditions, and provisions of this contract beyond the fiscal year is subject to approval and ratification by the Chesterfield County Board of Supervisors (and the Chesterfield County School Board, as applicable) and appropriation by them of the necessary money to fund said contract for each succeeding year.
- 2.2 Choice of Law and Venue: Any disputes under a resulting contract, that cannot be resolved between the County of Chesterfield and the offeror, must be resolved in the Circuit Court of Chesterfield County, Virginia. Any resulting contract shall be governed by the laws of the Commonwealth of Virginia.
- 2.3 Termination: It shall be the sole right of the County, to terminate any contract upon written notification to the Contractor.
- 2.4 Nondiscrimination Clause: In accordance with Section 2.2-4311 of the *Code of Virginia*, every contract for goods or services over \$10,000 shall include the following provisions:
 1. During the performance of this contract, the Contractor agrees as follows:
 - A. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex national origin age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

- B. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
 - C. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
2. The Contractor shall include the provisions of the foregoing paragraphs A, B, and C in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

- 2.5 Right To Audit: Contractor's records shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by the County to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by Contractor of any of its payees pursuant to execution of the contract. Such records subject to examination shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this contract.

For the purpose of such audits, inspections, examinations and evaluations, the County shall have access to said records from the effective date of this contract, for the duration of the work, and until two (2) years after the date of final payment by the County to Contractor pursuant to this contract.

The County shall have access to Contractor's facilities, shall have access to all necessary records, and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with this article. The County shall give Contractor reasonable advance notice of intended audits.

Contractor shall require all subcontractors, insurance agents, and materials suppliers (payees) to comply with the provisions of this article by insertion of the requirements hereof in a written contract agreement between Contractor and payee. Failure to obtain such written contracts which include such provisions shall be reason to exclude some or all of the related payees' costs from amount payable to Contractor pursuant to this contract.

If an audit inspection or examination in accordance with the article, discloses overcharges (of any nature) by Contractor to the County in excess of five percent (5%) of the total contract billings, the actual cost of the County's audit shall be paid by Contractor.

- 2.6 Insurance: The contractor shall purchase and maintain in force, at his own expense, such insurance as will protect him and the County from claims which may arise out of or result from the Contractor's execution of the work, whether such execution be by himself, his employees, agents, subcontractors, or by anyone for whose acts any of them may be liable. The insurance coverage shall be such as to fully protect the Owner, the Engineer (if applicable) and the general public from any and all claims for injury and damage resulting by any actions on the part of the contractor or his forces as enumerated above. The Contractor shall furnish a copy of an original Certificate of Insurance, naming Chesterfield County as additionally insured. Should any of the policies be canceled before the expiration date, the issuing company will mail 30 days written notice to the certificate holder. The Contractor shall furnish insurance in satisfactory limits, and on forms and of companies which are acceptable to the Owner's Attorney and/or Risk Management and shall require and show evidence of insurance coverages on behalf of any

subcontractors (if applicable), before entering into any agreement to sublet any part of the work to be done under this Contract.

2.7 Drug Free Workplace: During the performance of this contract, the contractor agrees to:

- A. Provide a drug-free workplace for the contractor's employees
- B. Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition
- C. State in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace
- D. Include the provisions of the foregoing clauses in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

2.8 Environmental Management: Vendor/Supplier/Contractor will be responsible for complying with all federal, state and local environmental regulations relating to transportation, handling, storage, spillage and any other aspect of providing the services specified herein, as applicable.

2.9 Faith-based Organization: Chesterfield County does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, Section 2.2-4343.1.

3.0 **PROJECT DESCRIPTION**

3.1 The Chesterfield County Community Development Building, which will be located at the County Government Complex in Chesterfield County, Virginia, is currently being designed by Moseley Architects, an architectural firm located in Richmond, Virginia. The building will be a 90,000 square foot facility designed to house all of the Community Development Departments for the County including Building Inspections, Transportation, Community Block Grant, Environmental Engineering and Planning.

3.2 Chesterfield County is seeking proposals from qualified engineering firms to provide the services of an independent commissioning agent to ensure the design intent of the Architect for this building is met.

4. **SCOPE OF SERVICES**

4.1 The following list of services is an indication of the minimum expectations of the County for this project. Offerors are encouraged to elaborate on the services they determine are required. At a minimum, the systems and sub-systems for which commissioning is required consists of the (1) HVAC, inclusive of (a) ventilation, (b) exhaust fans, (c) air conditioning, (d) design temperatures

and sensors, (e) control systems, (f) interface with security control system, and (g) building automation systems; (2) Plumbing, inclusive of (a) sanitary sewer, (b) roof drainage, (c) domestic hot water, (d) natural gas system, (e) plumbing fixtures, (f) fire protection system; and (3) Electrical, inclusive of (a) generator system, (b) transformers, (c) lighting systems and lighting control, (d) electric devices, conduits and conductors, (e) fire alarm system, and (f) interfaces with security control system.

5. GENERAL

- 5.1 All services of the Commissioning Agent shall be performed by or under the direct supervision of an Engineer licensed in the Commonwealth of Virginia.
- 5.2 As part of the service, the Agent will provide services for a return to the site at approximately 10 months into the warranty period to review with the facility staff/Owner the current building operation and condition of outstanding items related to the original and seasonal commissioning.
- 5.3 Agent will be required to assist the Architect, Moseley, in developing the requirements for commissioning and to fully understand the design intent of all building systems and subsystems.

6. PRE-CONSTRUCTION PHASE

- 6.1 Attend at least one meeting at the office of the Architect for a Review of the system design by the design team.
- 6.2 Develop a Commissioning plan that describes the commissioning process and the responsibilities of all parties. Plan shall be suitable for inclusion in the Construction Documents for Contractor coordination. Provide language as may be required in related specification sections in an electronic form to the design team so that it can be included in the Contract Documents.
- 6.3 Develop specifications for commissioning and performance testing to be included in the project manual. This shall include all test forms that will require Contractor involvement. Specifications shall clearly identify the contractor's, Owner's and A/E's responsibilities during commissioning. A sample of specification section 01810 Commissioning is attached to RFP as Attachment A. This section represents the minimum specification detail and completeness that will be required for this project.

7. CONSTRUCTION PHASE

- 7.1 Conduct a Pre-Construction meeting to define the Owner's requirements and ensure that the construction team (Owner's Representatives, A&E, Contractor, Testing & Balancing Personnel, and Sub-Contractors) fully understands the commissioning process and its implementation. Ensure that the responsibilities of each party are clearly defined.
- 7.2 Review submittals in a timely fashion for compliance with the Design Intent and the Commissioning Plan as it impacts the commissioning process.
- 7.3 Notify required participants in advance of each commissioning event.
- 7.4 Conduct meetings and prepare minutes for distribution as part of the commissioning process.
- 7.5 Oversee start-up, operation and testing and balancing.

7.6 Conduct a minimum of ten (10) site visits, as follows:

- A minimum of four (4) visits to observe the construction and installation of systems to be commissioned. Prepare a report of findings with recommendations for the Owner.
- A minimum of four (4) visits to supervise the execution of the performance testing. Prepare a report of findings with recommendations for the Owner.
- A minimum of two (2) visits to supervise the re-testing of up to 30% of performance tests. Prepare a report of findings with recommendations for the Owner.

8.0 **ACCEPTANCE PHASE**

8.1 Verify compliance of systems with construction documents.

8.2 Propose a suitable schedule and prepare agendas for training of systems, controls, etc. by the Contractor.

8.3 Prepare and submit a verification report to the Owner inclusive of performance test data. Submit a final commissioning report prior to Owner occupancy.

8.4 Review O & M Manuals and make appropriate comments.

8.5 Provide one day of specialized system training for the maintenance staff.

8.6 Confirm final Testing, Balancing, and Adjustment Report's accuracy.

8.7 Review as-built drawings for the systems commissioned.

9. **COUNTY'S RESPONSIBILITIES**

9.1 Provide to Engineer all information in possession of the County which relates to the County's requirements for the project or which is relevant to the project.

9.2 Examine all studies, test results, reports, sketches, drawings, specifications, and proposals, and any other documents presented by Engineer.

9.3 Designate a person to act as the County's representative with respect to the work to be performed under this Agreement for this project.

10. **QUALITY COMMITMENT**

10.1 Chesterfield County has adopted best management practices to ensure the highest quality of products and services are provided to its citizens. With this goal in mind, offerors are required to demonstrate they possess and utilize appropriate quality management systems which result in customer satisfaction and continuous improvement.

10.2 To satisfy these requirements, the offeror must demonstrate their firm's commitment to best management practices and providing services with the highest possible level of quality throughout all phases of work. Proposals must demonstrate, at a minimum, (1) a complete understanding of the processes utilized within the organization to ensure quality and (2) graphical demonstrations that outline quality and process management within the organization and how they relate with sub consultants and with the owner. This criteria shall not be satisfactorily met by indicating that the firm has a quality control process or manual that meets the goals that have been established by

Chesterfield County. The response to quality must be deliberate and contain sufficient evidence that the firm has adopted quality and best management practices as an integral part of the organization. As a part of the response to this request, offerors shall demonstrate the following:

1. Show the organization's process, e.g. process map, flow charts.
2. Show cycle time for process, e.g. Gantt chart, milestone chart.
3. Show historical data on budget and change orders, e.g. Pareto charts identifying the reasons for all change orders and frequency of occurrence.
4. Demonstrate processes in place to recognize, track and analyze project change orders due to errors and omissions (including those caused by any sub consultants) and discuss how these processes are utilized to minimize future occurrences.
5. Demonstrate customer satisfaction data, e.g. Indicate that there are systems in place allowing for a proactive approach to collecting customer satisfaction data. Demonstrate how this data is collected and analyzed and what actions are taken on the data results.

11. CONTRACT DOCUMENT

- 11.1 Chesterfield County will require the use of AIA Document – B141-1997, Standard Form of Agreement Between Owner and Architect, as amended by the county, as its contractual agreement for this project with the successful firm. An Acknowledgment Form along with the list of amendments the county has issued for this document are included with this RFP as Attachment B. A completed Acknowledgment Form should be returned to the county as a part of your proposal. Failure to return the Acknowledgment Form may be detrimental to the evaluation of your proposal.

12. SPECIFIC TERMS AND CONDITIONS OF THE REQUEST FOR PROPOSAL

12.1 EVALUATION CRITERIA

- 12.1.1 These criteria are to be utilized in the evaluation of qualifications for development of the shortlist of those offerors to be considered for interviews and/or potential negotiations. Individual criteria may in all probability be assigned varying weights at the County's discretion to reflect relative importance. Offerors are required to address each evaluation criteria in the order listed and to be specific in presenting their qualifications.

- A. Depth and variety of staff disciplines. This section should clearly identify all disciplines available within the firm and those which will be subcontracted to others. Include resumes of all key individuals of the firm and of the subcontractors who will be involved in this project. Resumes should adequately describe educational background and specific area of expertise.
- B. Managerial capabilities including ability to manage projects simultaneously and expeditiously; approach to problem/task resolution; and methodology/data gathering techniques and procedures.
- C. Priority to be assigned to this project.
- D. Demonstration of the firm's ability to perform Engineering services relative to those of a commissioning agent.

- E. Demonstration of quality commitment as outlined in Section 10.

12.2 SELECTION PROCEDURE

- 12.2.1 The public body shall engage in individual discussions with two or more offerors deemed fully qualified, responsible, and suitable on the basis of initial responses and with emphasis on professional competence, to provide the required services. Repetitive informal interviews shall be permissible. Such offerors shall be encouraged to elaborate on their qualifications and performance data or staff expertise pertinent to the proposed project, as well as alternative concepts. At the discussion stage, the public body may discuss non-binding estimates of total project costs, including, but not limited to, life-cycle costing, and where appropriate, non-binding estimates of price for services. Proprietary information from competing offerors shall not be disclosed to the public or to competitors. At the conclusion of discussion, outlined in this paragraph above, on the basis of evaluation factors published in the Request for Proposal and all information developed in the selection process to this point, the public body shall select in the order of preference two or more offerors whose professional qualifications and proposed services are deemed most meritorious. Negotiations shall then be conducted, beginning with the offeror ranked first. If a contract satisfactory and advantageous to the public body can be negotiated at a price considered fair and reasonable, the award shall be made to that offeror. Otherwise, negotiations with the offeror ranked first shall be formally terminated and negotiations conducted with the offeror ranked second, and so on until such a contract can be negotiated at a fair and reasonable price. Should the public body determine in writing and in its sole discretion that only one offeror is fully qualified, or that one offeror is clearly more highly qualified and suitable than the others under consideration, a contract may be negotiated and awarded to that offeror.

12.3 REFERENCES

- 12.3.1 All offerors shall include a list of a minimum of five references, from similar projects only, who could attest to the firm's knowledge, quality of work, timeliness, diligence, flexibility, and ability to meet budget constraints. Include names, contact persons, and phone numbers of all references.
- 12.3.2 References may or may not be reviewed or contacted at the discretion of the County. Typically, only references of the top ranked shortlisted offeror or offerors are contacted. The County reserves the right to contact references other than, and/or in addition to, those furnished by an offeror.

12.4 BASIS FOR AWARD

- 12.4.1 Information and/or factors gathered during interviews, negotiations and any reference checks, in addition to the evaluation criteria stated in the RFP, and any other information or factors deemed relevant by the county, shall be utilized in the final award.

12.5 NO CONTACT POLICY

- 12.5.1 After the date and time established for receipt of proposals by the County, any contact initiated by any offeror with any County representative, other than the Purchasing Department representative

listed herein, concerning this request for proposals is prohibited. Any such unauthorized contact may cause the disqualification of the offeror from this procurement transaction.

12.6 FURTHER INFORMATION

- 12.6.1 Questions of a technical nature which may arise as a result of this Request for Proposal may be directed to Mr. Robert Rivers, Construction Manager at (804) 796-7098. Any other questions may be directed to Donna R. Clarke, CPPB, Senior Contract Administrator, (804) 748-1837 or by Internet E-mail to purchasing@co.chesterfield.va.us.

SIGNATURE SHEET

My signature certifies that the proposal as submitted complies with all Terms and Conditions as set forth in **RFP #03-589-8892**.

My signature also certifies that the accompanying proposal is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under Title 18.2, Chapter 12, Article 1.1 of the *Code of Virginia*, 1950 as amended. Furthermore, I understand that fraud and unlawful collusion are crimes under the Virginia Governmental Frauds Act, the Virginia Government Bid Rigging Act, and Virginia Antitrust Act, and Federal Law, and can result in fines, prison sentences, and civil damage awards.

My signature also certifies that this firm has no business or personal relationships with any other companies or persons that could be considered as a conflict of interest or potential conflict of interest to the County of Chesterfield, and that there are no principals, officers, agents, employees, or representatives of this firm that have any business or personal relationships with any other companies or persons that could be considered as a conflict of interest or a potential conflict of interest to the County of Chesterfield, pertaining to any and all work or services to be performed as a result of this request and any resulting contract with the County of Chesterfield.

To receive consideration for award, this signature sheet must be returned to the Purchasing Department as it shall be a part of your response.

I hereby certify that I am authorized to sign as a Representative for the Firm:

Complete Legal Name of Firm: _____

Address: _____

Federal Tax ID Number: _____

Signature: _____

Typed Name and Title: _____

Please provide the primary contact person for questions and concerns relative to this project:

Contact Name and Title: _____

Phone: (____) _____ **Fax:** (____) _____ **Email:** _____

We hereby provide the following information to Chesterfield County regarding our business. We understand that it is provided for statistical purposes only and all firms submitting proposals will receive equal consideration.

Minority Business Enterprise: Yes _____ No _____

Woman-Owned Business: Yes _____ No _____

Chesterfield Business: Yes _____ No _____

CERTIFICATION OF SUBCONTRACTOR/SUPPLIER ACTIVITY
MINORITY BUSINESS ENTERPRISES, WOMAN-OWNED BUSINESSES, AND
CHESTERFIELD BUSINESSES

Project/Contract Name/Number:

Contractors shall furnish the information requested below regarding subcontractor(s) or supplier(s).

(This form will be sent to the contractor by the Purchasing Department for completion at the time of award/renewal, as appropriate.)

Name and Address of Subcontractor/Supplier	(T) MBE	(T) WOB	(T) CB	Commodity or Service	Dollar Amount

If a continuation of this list of subcontractors/suppliers is needed, please attach additional pages to this form.

I have no MBE, WOB or CB applicable to this contract _____(T)

Contractor hereby certifies that the above information is correct.

Complete Legal Name of Firm: _____ Date: _____

Form Prepared By: _____
(Type or Print)

ATTACHMENT A

Modernization of the South Building
US Department of Agriculture

Sol. # IFB-OPPM-02-B-31

SECTION 01810

COMMISSIONING

PART 1 - GENERAL

1.1 SUMMARY

- A. Commissioning. The construction phase commissioning plan (CPCP) ensures that all equipment and related systems operate per the design intent. It describes the roles and responsibilities of the participants, outlines the requirements of the commissioning process and provides a general schedule of activities. While it does not provide the detailed testing procedures it is a guide in establishing the minimum requirements to properly execute the commissioning process.

Commissioning during the construction phase is intended to achieve the following specific objectives according to the Contract Documents:

- 1) Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout by installing contractors.
- 2) Verify and document proper performance of equipment and systems.
- 3) Verify that O&M documentation left on site is complete.
- 4) Verify that the Owner's operating personnel are adequately trained.

- B. The commissioning process does not take away from or reduce the responsibility of the system designers or installing contractors to provide a finished and fully functioning product.

1.2 COORDINATION

- A. Commissioning Team. The members of the commissioning team consist of the Commissioning authority (CA), the Project Manager (PM), the designated representative of the owner's Construction Management firm (CM), the General Contractor (GC or Contractor), the architect and design engineers (particularly the mechanical engineer), the Mechanical Contractor (MC), the Electrical Contractor (EC), the TAB representative, the Controls Contractor (CC), any other installing subcontractors or suppliers of equipment. If known, the Owner's building or plant operator/engineer is also a member of the commissioning team.
- B. Management. The CA is hired by the PM. The CA directs and coordinates the commissioning activities. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents. The CA's responsibilities are the same regardless of who hired the CA. The CPCP provides an organizational flowchart.

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US Department of Agriculture

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- C. Scheduling. The CA will work with the CM and GC according to established protocols to schedule the commissioning activities. The CA will provide sufficient notice to the CM and GC for scheduling commissioning activities. The GC will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

The CA will provide the initial schedule of primary commissioning events at the commissioning kickoff meeting. As construction progresses more detailed schedules are developed by the CA.

1.3 COMMISSIONING PROCESS

- A. Construction Phase Commissioning Plan. The CPCP draft provided as part of the bid documents. This plan should be utilized to assist in establishing the amount of effort required to complete the commissioning effort. The CPCP provides guidance in the execution of the commissioning process. Just after the initial commissioning kickoff meeting the CA will update the plan which is then considered the "final" plan, though it will continue to evolve and expand as the project progresses. The *Specifications* will take precedence over the *Commissioning Plan*.
- B. Commissioning Process. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.
1. Commissioning during construction begins with a Cx kickoff meeting conducted by the CA where the commissioning process is reviewed with the commissioning team members.
 2. Additional meetings will be required throughout construction, scheduled by the CA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
 3. Equipment documentation is submitted to the CA during normal submittals, including detailed start-up procedures.
 4. The CA works with the Subs in developing testing plans and documentation formats, including providing the Subs with enhanced pre-functional checklists, as required, to be completed, during the startup process.
 5. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels with pre-functional checklists being completed before functional testing.
 6. The Subs, under their own direction, execute and document the pre-functional checklists. The CA documents that the checklists and startup were completed according to the approved plans. This may include the CA witnessing pre-functional checks of selected equipment.
 7. The CA develops specific functional and integrated performance test procedures. The Subs review the procedures.
 8. The procedures are executed by the Subs, with any required CA coordination.
 9. Items of non-compliance in material, installation or setup are corrected at the Sub's expense and the system retested.
 10. The CA reviews the O&M documentation for completeness.
 11. Commissioning is completed before Substantial Completion.

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12. The CA reviews and pre-approves the training provided by the Subs and verifies that is was completed.
13. Deferred testing is conducted, as specified or required.

1.4 RELATED WORK

Refer to relevant divisions for further information concerning testing. In particular, refer to Division 17 covering some of the items to be commissioned.

1.5 RESPONSIBILITIES

The responsibilities of various parties in the commissioning process are provided in this section. The responsibilities of the mechanical contractor, TAB and controls contractor are in Division 15 and those of the electrical contractor in Division 16. Additional mechanical and electrical responsibilities are in Division 17.

- A. Each contractor is responsible for the cost of their part of the commissioning effort.
- B. All Parties
 1. Follow the Commissioning Plan.
 2. Attend commissioning kickoff meeting and additional meetings, as necessary.
- C. Architect (of A/E)
 - Construction and Acceptance Phase*
 1. Attend the commissioning kickoff meeting and selected commissioning team meetings.
 2. Perform normal submittal review, construction observation, as-built drawing preparation, O&M manual preparation, etc., as contracted.
 3. Provide any design narrative documentation requested by the CA.
 4. Coordinate resolution of system deficiencies identified during commissioning, according to the contract documents.
 5. Prepare and submit final as-built design intent documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.
 - Warranty Period*
 1. Coordinate resolution of design non-conformance and design deficiencies identified during warranty-period commissioning.
- D. Mechanical and Electrical Designers/Engineers (of the A/E)
 - Construction and Acceptance Phase*
 1. Perform normal submittal review, construction observation, as-built drawing preparation, etc., as contracted. One site observation should be completed just prior to system startup.
 2. Provide any design narrative and sequences documentation requested by the CA. The designers shall assist (along with the contractors) in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed testing procedures.

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3. Attend commissioning kickoff meeting and other selected commissioning team meetings.
4. Participate in the resolution of system deficiencies identified during commissioning, according to the contract documents.
5. Prepare and submit the final as-built design intent and operating parameters documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.
6. From the Contractor's red-line drawings, edit and update one-line diagrams developed as part of the design narrative documentation and those provided by the vendor as shop drawings as required.
7. Provide a presentation at one of the training sessions for the Owner's personnel.

Warranty Period

1. Participate in the resolution of non-compliance, non-conformance and design deficiencies identified during commissioning during warranty-period commissioning.

E. Commissioning Authority (CA)

The CA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CA may assist with problem solving non-conformance or deficiencies, but ultimately that responsibility resides with the general contractor and the A/E. The primary role of the CA is to develop and coordinate the execution of a testing plan, observe and document performance—that systems are functioning in accordance with the documented design intent and in accordance with the Contract Documents. The Contractors will provide all tools or the use of tools to start, check-out and functionally test equipment and systems, except for specified testing with portable data-loggers, which shall be supplied and installed by the CA.

Construction Phase Commissioning

1. Coordinates and directs the commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise.
2. Coordinate the commissioning work and, with the GC and CM, ensure that activities are being scheduled into the master schedule.
3. Revise, as necessary, the Construction Phase Commissioning Plan..
4. Plan and conduct a commissioning kickoff meeting and other commissioning meetings.
5. Request and review additional information required to perform commissioning tasks, including O&M materials, contractor start-up and checkout procedures.
6. Before startup, gather and review the current control sequences and interlocks and work with contractors and design engineers until sufficient clarity has been obtained, in writing, to be able to write detailed testing procedures.
7. Write and distribute pre-functional tests and checklists.
8. Perform site visits, as necessary, to observe component and system installations. Attends selected planning and job-site meetings to obtain information on construction progress. Review construction meeting minutes for revisions/substitutions relating to the commissioning process. Assist in resolving any discrepancies.
9. Approve pre-functional tests and checklist completion by reviewing pre-functional checklist reports and by selected site observation and spot checking.
10. Approve systems startup by reviewing start-up reports and by selected site observation.

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11. Review TAB execution plan.
12. Observe sufficient functional testing of the control system and approve it to be used for TAB, before TAB is executed.
13. Approve air and water systems balancing by spot testing, by reviewing completed reports and by selected site observation.
14. With necessary assistance and review from installing contractors, write the functional and integrated performance test procedures for equipment and systems.
15. Analyze any functional performance trend logs and monitoring data to verify performance.
16. Coordinate, witness and approve manual functional performance tests performed by installing contractors. Coordinate retesting as necessary until satisfactory performance is achieved.
17. Review equipment warranties to ensure that the Owner's responsibilities are clearly defined.
18. Compile and maintain a final commissioning report with commissioning record.
19. Review and approve the preparation of the O&M manuals.

Warranty Period

1. Coordinate with participants and observe seasonal or deferred testing and deficiency corrections.
2. Return to the site at 10 months into the 12 month warranty period and review with facility staff the current building operation and the condition of outstanding issues related to the original and seasonal commissioning. Also interview facility staff and identify problems or concerns they have operating the building as originally intended. Make suggestions for improvements and for recording these changes in the O&M manuals. Identify areas that may come under warranty or under the original construction contract. Assist facility staff in developing reports, documents and requests for services to remedy outstanding problems.

F. Construction Manager—Owner's Representative (CM)

Construction Phase Commissioning

1. Facilitate the coordination of the commissioning work by the CA, and, with the GC and CA, ensure that commissioning activities are being scheduled into the master schedule.
2. Attend a commissioning kickoff meeting and other commissioning team meetings.
3. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned equipment to the CA.
4. Review commissioning progress.
5. Coordinate the resolution of non-compliance and design deficiencies identified in all phases of commissioning.
6. Assist the GC in coordinating the training of owner personnel.

Warranty Period

1. Assist the CA as necessary in the seasonal or deferred testing and deficiency corrections required by the specifications.

G. General Contractor (GC)

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Construction Phase Commissioning

1. Facilitate the coordination of the commissioning work by the CA, and with the GC and CA ensure that commissioning activities are being scheduled into the master schedule.
2. Include the cost of commissioning in the total contract price.
3. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned equipment to the CA.
4. In each purchase order or subcontract written, include requirements for submittal data, O&M data, commissioning tasks and training.
5. Ensure that all Subs execute their commissioning responsibilities according to the Contract Documents and schedule.
6. A representative shall attend a commissioning kickoff meeting and other necessary meetings scheduled by the CA to facilitate the Cx process.
7. Coordinate the training of owner personnel.
8. Prepare O&M manuals, according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.

Warranty Period

1. Ensure that Subs execute seasonal or deferred functional performance testing, witnessed by the CA, according to the specifications.
2. Ensure that Subs correct deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal testing.

1.6 DEFINITIONS

Commissioning authority (CA) - an independent agent, not otherwise associated with the A/E team members or the Contractor, though he/she may be hired as a subcontractor to them. The CA directs and coordinates the day-to-day commissioning activities. The CA does not take an oversight role like the CM. The CA is part of the Construction Manager (CM) team or shall report directly to the CM.

Construction Phase Commissioning Plan (CPCP) - an overall plan, developed before or after bidding that provides the structure, schedule and coordination planning for the commissioning process.

Deferred Functional Tests - Tests that are performed later, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design or other site conditions that disallow the test from being performed.

Functional Testing Procedures Integrated testing is the dynamic testing of each piece of equipment. The equipment is tested under various modes to ensure proper operation. FPT's are performed after pre-functional testing is complete.

Integrated Testing Procedures (IPT) Integrated testing is the dynamic testing of systems (rather than just components) under full operation (e.g., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint). Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying

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outside air temperatures, fire alarm, power failure, etc. The systems are run through all the control system's sequences of operation and components are verified to be responding as the sequences state. IPT's are performed after functional testing is complete. Owner-Contracted Tests - tests paid for by the Owner outside the GC's contract and for which the CA does not oversee. These tests will not be repeated during functional tests if properly documented.

Pre-functional Checklist (PC) - a list of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by the CA to the Sub. Pre-functional checklists are primarily static inspections and procedures to prepare the equipment or system for initial operation (e.g., belt tension, oil levels OK, labels affixed, gages in place, sensors calibrated, etc.). However, some pre-functional checklist items entail simple testing of the function of a component, a piece of equipment or system (such as measuring the voltage imbalance on a three phase pump motor of a chiller system). The word pre-functional refers to before functional testing. Pre-functional checklists augment and are combined with the manufacturer's start-up checklist

1.7 SYSTEMS TO BE COMMISSIONED

- A. The following equipment and systems will be commissioned in this project.
 - A. (4) Air Handlers
 - B. (4) Unit Heaters
 - C. Fin Tube Radiation
 - D. VAV Boxes
 - E. Automatic Temperature Control System
 - F. Lighting Control System
 - G. (4) Variable Frequency Drives
 - H. Security System

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

- A. All standard testing equipment required to perform testing shall be provided by the Division contractor for the equipment being tested. For example, the mechanical contractor of Division 15 shall ultimately be responsible for all standard testing equipment for the HVAC system and controls system in Division 15, except for equipment specific to and used by TAB in their commissioning responsibilities.
- B. Special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and left on site, except for stand-alone data logging equipment that may be used by the CA.
- C. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the *Specifications*. If not otherwise noted, the

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following minimum requirements apply: Temperature sensors and digital thermometers shall have a certified calibration within the past year to an accuracy of 0.5°F and a resolution of + or - 0.1°F. Pressure sensors shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

PART 3 - EXECUTION

3.1 MEETINGS

- A. Kickoff Meeting. 90 days of commencement of construction, the CA will schedule, plan and conduct a commissioning kickoff meeting with the entire commissioning team in attendance. Meeting minutes will be distributed to all parties by the CA. Information gathered from this meeting will allow the CA to revise the CPCP draft to its "final" version, which will also be distributed to all parties.
- B. Miscellaneous Meetings. Other meetings will be planned and conducted by the CA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with particular Subs. The CA will plan these meetings and will minimize unnecessary time being spent by Subs. For large projects, these meetings may be held monthly, until the final 3 months of construction when they may be held as frequently as one per week.

3.2 REPORTING

- A. The CA will provide regular reports to the CM or PM, depending on the management structure, with increasing frequency as construction and commissioning progresses.
- B. The CA will regularly communicate with all members of the commissioning team, keeping them apprised of commissioning progress and scheduling changes through memos, progress reports, etc.
- C. Testing or review approvals and non-conformance and deficiency reports are made regularly with the review and testing as described in later sections.
- D. A final summary report (about four to six pages, not including backup documentation) by the CA will be provided to the CM or PM, focusing on evaluating commissioning process issues and identifying areas where the process could be improved. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report. Pre-functional checklists, functional tests and monitoring reports will not be part of the final report, but will be stored in the Commissioning Record in the O&M manuals.

3.3 SUBMITTALS

- A. The CA will provide appropriate contractors with a specific request for the type of submittal documentation the CA requires to facilitate the commissioning work. These requests will be

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integrated into the normal submittal process and protocol of the construction team. At minimum, the request will include the manufacturer and model number, the manufacturer's printed installation and detailed start-up procedures, full sequences of operation, O&M data, performance data, any performance test procedures, control drawings and details of owner contracted tests. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the Commissioning authority. All documentation requested by the CA will be included by the Subs in their O&M manual contributions.

- B. The Commissioning authority will review and approve submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the commissioning process, to the functional performance of the equipment and adequacy for developing test procedures. This review is intended primarily to aid in the development of functional testing procedures and only secondarily to verify compliance with equipment specifications. The Commissioning authority will notify the CM, PM or A/E as requested, of items missing or areas that are not in conformance with Contract Documents and which require resubmission.
- C. The CA may request additional design narrative from the A/E and Controls Contractor, depending on the completeness of the design intent documentation and sequences provided with the Specifications.
- D. These submittals to the CA do not constitute compliance for O&M manual documentation. The O&M manuals are the responsibility of the Contractor, though the CA will review and approve them.

3.4 PRE-FUNCTIONAL CHECKLISTS

The following procedures apply to all equipment to be commissioned.

- A. General. Pre-functional checklists are important to ensure that the equipment and systems are hooked up and operational as per manufacturer's requirements and that functional performance testing and integrated performance testing may proceed without unnecessary delays. Each piece of equipment receives full pre-functional checkout by the Contractor. No sampling strategies are used. In general, the pre-functional testing for a given system, must be successfully completed prior to formal functional performance testing of equipment or subsystems of the given system.
 - a. These checklists and tests are provided by the CA to the Contractor. The Contractor determines which trade is responsible for executing and documenting each of the line item tasks and notes that trade on the form.
 - b. The CA is responsible for the checklists which are normally based on the manufacturer's start-up and checkout procedures. The plan will include checklists and procedures with specific boxes or lines for recording and documenting the checking and inspections of each procedure and a summary statement with a signature block at the end of the plan.
 - c. The full start-up procedures and the approval form may be provided to the CM for review and approval, depending on management protocol.

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E. Execution of Pre-functional Checklists.

1. Four weeks prior to startup, the Subs and vendors schedule startup and checkout with the CM, GC and CA. The performance of the pre-functional checklists, startup and checkout are directed and executed by the Sub or vendor. When checking off pre-functional checklists, signatures may be required of other Subs for verification of completion of their work.
2. For lower-level components of equipment, (e.g., VAV boxes, sensors, controllers), the CA shall observe a sampling of the pre-functional and start-up procedures. The sampling procedures are identified in the commissioning plan.
3. The Subs and vendors shall execute startup and provide the CA with a signed and dated copy of the completed start-up and pre-functional tests and checklists.
4. Only individuals that have direct knowledge and witnessed that a line item task on the pre-functional checklist was actually performed shall initial or check that item off. It is not acceptable for witnessing supervisors to fill out these forms.

F. Deficiencies, Non-Conformance and Approval in Checklists and Startup.

List any outstanding items of the initial testing procedures that were not completed successfully at the bottom of the procedures form or on an attached sheet. The procedures form and deficiencies are provided to the CA within two days of test completion. The CA works with the subcontractors and vendors to correct and retest deficiencies or uncompleted items, involving the CM and others as necessary. The installing subcontractors or vendors correct all areas that are deficient or incomplete according to the checklists and tests. The CA recommends approval of the testing to the CM.

3.6 FUNCTIONAL & INTEGRATED PERFORMANCE TESTING

- A. Objectives and Scope. The objective of functional & integrated performance testing is to demonstrate that each system is operating according to the documented design intent and Contract Documents.

In general, each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc. shall also be tested. Specific modes required in this project are given in Sections 15997, 16997.

- E. The CA shall review owner-contracted, factory testing or required owner acceptance tests which the CA is not responsible to oversee, including documentation format, and shall determine what further testing or format changes may be required to comply with the *Specifications*. Redundancy of testing shall be minimized.

The purpose of any given specific test is to verify and document compliance with the stated criteria of acceptance given on the test form.

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The test procedure forms developed by the CA shall include (but not be limited to) the following information:

1. System and equipment or component name(s)
2. Equipment location and ID number
3. Unique test ID number, and reference to unique pre-functional checklist and start-up documentation ID numbers for the piece of equipment
4. Date
5. Project name
6. Participating parties
7. A copy of the specification section describing the test requirements
8. A copy of the specific sequence of operations or other specified parameters being verified
9. Formulas used in any calculations
10. Required pre-test field measurements
11. Instructions for setting up the test.
12. Special cautions, alarm limits, etc.
13. Specific step-by-step procedures to execute the test, in a clear, sequential and repeatable format
14. Acceptance criteria of proper performance with a Yes / No check box to allow for clearly marking whether or not proper performance of each part of the test was achieved.
15. A section for comments
16. Signatures and date block for the CA

F. Test Methods.

1. Functional & integrated performance testing and verification may be achieved by manual testing (persons manipulate the equipment and observe performance) or by monitoring the performance and analyzing the results using the control system's trend log capabilities or by stand-alone data loggers. Division 15, 16 or 17 for the relevant equipment specify which methods shall be used for each test. The CA may substitute specified methods or require an additional method to be executed, other than what was specified, with the approval of the CM. This may require a change order and adjustment in charge to the Owner. The CA will determine which method is most appropriate for tests that do not have a method specified.
2. Simulated Conditions. Simulating conditions (not by an overwritten value) shall be allowed, though timing the testing to experience actual conditions is encouraged wherever practical.
3. Overwritten Values. Overwriting sensor values to simulate a condition, such as overwriting the outside air temperature reading in a control system to be something other than it really is, shall be allowed, but shall be used with caution and avoided when possible. Such testing methods often can only test a part of a system, as the interactions and responses of other systems will be erroneous or not applicable. Simulating a condition is preferable. Before simulating conditions or overwriting values, sensors, transducers and devices shall have been calibrated.
4. Simulated Signals. Using a signal generator which creates a simulated signal to test and calibrate transducers and DDC constants is generally recommended over using the sensor to act as the signal generator via simulated conditions or overwritten values.

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5. Altering Setpoint. Rather than overwriting sensor values, and when simulating conditions is difficult, altering setpoint to test a sequence is acceptable. For example, to see the AC compressor lockout work at an outside air temperature below 55F, when the outside air temperature is above 55F, temporarily change the lockout setpoint to be 2F above the current outside air temperature.
6. Indirect Indicators. Relying on indirect indicators for responses or performance shall be allowed only after visually and directly verifying and documenting, over the range of the tested parameters, that the indirect readings through the control system represent actual conditions and responses. Much of this verification is completed during pre-functional testing.
7. Setup. Each function and test shall be performed under conditions that simulate actual conditions as close as is practically possible. The Sub executing the test shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions. At completion of the test, the Sub shall return all affected building equipment and systems, due to these temporary modifications, to their pre-test condition.
8. Sampling. Multiple identical pieces of non-life-safety or otherwise non-critical equipment may be functionally tested using a sampling strategy. Significant application differences and significant sequence of operation differences in otherwise identical equipment invalidates their common identity. A small size or capacity difference, alone, does not constitute a difference. It is noted that no sampling by Subs is allowed in pre-functional checklist execution.

A common sampling strategy referenced in the *Specifications* as the "xx% Sampling—yy% Failure Rule" is defined by the following example.

xx = the percent of the group of identical equipment to be included in each sample.
yy = the percent of the sample that if failing, will require another sample to be tested.

The example below describes a 20% Sampling—10% Failure Rule.

- a. Randomly test at least 20% (xx) of each group of identical equipment. In no case test less than three units in each group. This 20%, or three, constitute the "first sample."
 - b. If 10% (yy) of the units in the first sample fail the functional performance tests, test another 20% of the group (the second sample).
 - c. If 10% of the units in the second sample fail, test all remaining units in the whole group.
 - d. If at any point, frequent failures are occurring and testing is becoming more troubleshooting than verification, the CA may stop the testing and require the responsible Sub to perform and document a checkout of the remaining units, prior to continuing with functionally testing the remaining units.
- G. Coordination and Scheduling. The Subs shall provide sufficient notice to the CA regarding their completion schedule for the pre-functional checklists and startup of all equipment and systems. The CA will schedule functional tests through the CM, GC and affected Subs. The

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CA shall direct, witness and document the functional testing of all equipment and systems. The Subs shall execute the tests.

In general, functional testing is conducted after pre-functional testing and startup has been satisfactorily completed. The control system is sufficiently tested and approved by the CA before it is used for TAB or to verify performance of other components or systems. The air balancing and water balancing is completed and debugged before functional testing of air-related or water-related equipment or systems. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems is checked.

- I. Problem Solving. The CA will recommend solutions to problems found, however the burden of responsibility to solve, correct and retest problems is with the GC, Subs and A/E.

3.7 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF TESTS

- A. Documentation. The CA shall witness and document the results of all functional performance tests using the specific procedural forms developed for that purpose. Prior to testing, these forms are provided to the CM for review and approval and to the Subs for review.

B. Non-Conformance.

1. The Subs will record the results of the functional and integrated test on the procedure or test form. All deficiencies or non-conformance issues shall be noted and reported to the CM.
2. Corrections of minor deficiencies identified may be made during the tests at the discretion of the CA. In such cases the deficiency and resolution will be documented on the testing form.
3. Every effort will be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the CA will not be pressured into overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues, unless there is an overriding reason to do so at the request of the CM.
4. If there is a dispute about a deficiency, regarding whether it is a deficiency or who is responsible:
 - 1) The deficiency shall be documented to the CM and to the Sub representative assumed to be responsible.
 - 2) Resolutions are made at the lowest management level possible. Other parties are brought into the discussions as needed. Final interpretive authority is with the A/E. Final acceptance authority is with the Project Manager.
 - 3) The CA documents the resolution process.
 - 4) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency. The CA reschedules the test and the test is repeated until satisfactory performance is achieved.

5. Cost of Retesting.

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- a. The cost for the *Sub* to retest a pre-functional or functional test, if they are responsible for the deficiency, shall be theirs. If they are not responsible, any cost recovery for retesting costs shall be negotiated with the GC.
 - b. For a deficiency identified, not related to any test, the following shall apply: The CA and CM will direct the retesting of the equipment once at no "charge" to the GC for their time. However, the CA's and CM's time for a second retest will be charged to the GC, who may choose to recover costs from the responsible Sub.
 - c. The time for the CA and CM to direct any retesting required because a specific *pre-functional* checklist or start-up test item, reported to have been successfully completed, but determined during functional testing to be faulty, will be back charged to the GC, who may choose to recover costs from the party responsible for executing the faulty pre-functional test.
 - d. Refer to the sampling section of Section 17100, Part 3 for requirements for testing and retesting identical equipment.
6. Any required retesting by any contractor shall not be considered a justified reason for a claim of delay or for a time extension by the prime contractor.
- C. Failure Due to Manufacturer Defect. If 10%, or three, whichever is greater, of identical pieces (size alone does not constitute a difference) of equipment fail to perform to the Contract Documents (mechanically or substantively) due to manufacturing defect, not allowing it to meet its submitted performance spec, all identical units may be considered unacceptable by the CM or PM. In such case, the Contractor shall provide the Owner with the following:
- a. Within one week of notification from the CM or PM, the Contractor or manufacturer's representative shall examine all other identical units making a record of the findings. The findings shall be provided to the CM or PM within two weeks of the original notice.
 - b. Within two weeks of the original notification, the Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions which shall include full equipment submittals. The proposed solutions shall not significantly exceed the specification requirements of the original installation.
 - c. The CM or PM will determine whether a replacement of all identical units or a repair is acceptable.
 - d. Two examples of the proposed solution will be installed by the Contractor and the CM will be allowed to test the installations for up to one week, upon which the CM or PM will decide whether to accept the solution.
 - e. Upon acceptance, the Contractor and/or manufacturer shall replace or repair all identical items, at their expense and extend the warranty accordingly, if the original equipment warranty had begun. The replacement/repair work shall proceed with reasonable speed beginning within one week from when parts can be obtained.
- D. Approval. The CA notes each satisfactorily demonstrated function on the test form. Formal approval of the functional test is made later after review by the CA and by the CM, if necessary. The CA recommends acceptance of each test to the CM using a standard form. The CM gives final approval on each test using the same form, providing a signed copy to the CA and the Contractor.

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3.8. OPERATION AND MAINTENANCE MANUALS

A. Standard O&M Manuals.

1. The specific content and format requirements for the standard O&M manuals are detailed in Section 01300. Special requirements for the controls contractor and TAB contractor are found Sections 15990 and 17975.
2. CA Review and Approval. Prior to substantial completion, the CA shall review the O&M manuals, documentation and redline as- to verify compliance with the *Specifications*. The CA will communicate deficiencies in the manuals to the CM, PM or A/E, as requested. Upon a successful review of the corrections, the CA recommends approval and acceptance of these sections of the O&M manuals to the CM, PM or A/E. The CA also reviews each equipment warranty and verifies that all requirements to keep the warranty valid are clearly stated. This work does not supersede the A/E's review of the O&M manuals according to the A/E's contract.

B. Construction Phase Commissioning Report (Commissioning Record)

The CA is responsible to compile, organize and index the final report as outlined in the commissioning plan.

3.9 TRAINING OF OWNER PERSONNEL

The CA reviews the O&M documentation and verifies compliance for content and format with specifications. The CA recommends approval and acceptance of these sections of the O&M manuals to the CM. The CA also reviews each equipment warranty and verifies that all requirements to keep the warranty valid are clearly stated.

3.10 DEFERRED TESTING

- A. Unforeseen Deferred Tests. If any check or test cannot be completed due to the building structure, required occupancy condition or other deficiency, execution of checklists and functional testing may be delayed upon approval of the PM. These tests will be conducted in the same manner as the seasonal tests as soon as possible. Services of necessary parties will be negotiated.
- B. Seasonal Testing. During the warranty period, seasonal testing (tests delayed until weather conditions are closer to the system's design) shall be completed as part of this contract. The CA shall coordinate this activity. Tests will be executed, documented and deficiencies corrected by the appropriate Subs, with facilities staff and the CA witnessing. Any final adjustments to the O&M manuals and as-builds due to the testing will be made.

Modernization of the South Building
US Department of Agriculture

Sol. # IFB-OPPM-02-B-31

END OF GUIDE SPECIFICATION SECTION

July 17, 2002

ATTACHMENT B

Note: This acknowledgement form should be included with your proposal.

ACKNOWLEDGMENT FORM

I hereby agree that as an authorized representative of _____, our firm hereby agrees to enter into a contractual agreement using the AIA Document B141-1997, as modified by Chesterfield County, should our firm be awarded this project.

Name _____

Signature _____

Date _____

CHESTERFIELD COUNTY'S AMENDMENTS TO AIA DOCUMENT - B141- 1997,
STANDARD FORM OF AGREEMENT BETWEEN OWNER AND ARCHITECT

ARTICLE 1.1. INITIAL INFORMATION.

Paragraph 1.1.6. Delete the paragraph and replace it with the following: "The information contained in this Article is for informational purposes. It may not be relied upon by the Architect or the Architect's Consultant for determining the Architect's compensation and shall not form the basis for a change in contract price if the information changes."

ARTICLE 1.2. RESPONSIBILITIES OF THE PARTIES.

Paragraph 1.2.2.1. In the second line, delete the words "in a timely manner". In the third line, delete the words "15 days" and replace them with the words "a reasonable time".

Paragraph 1.2.2.2. Delete the second sentence.

Paragraph 1.2.2.3. Delete the first sentence and replace it with the following: "When necessary, the Owner shall designate a representative who shall be authorized to act on the Owner's behalf with respect to the Project."

Paragraph 1.2.3.1. At the end of the paragraph add the following: "and in the Owner's amendments to this Standard Form Agreement and to the Standard Form of Architects Services."

Paragraph 1.2.3.2. In the third and fourth lines, delete the words "which initially shall be consistent with the time periods established in Subparagraph 1.1.2.6." In the last line, delete the words "or Owner".

Paragraph 1.2.3.4. Beginning on the second line, delete the words "create the risk of significant harm to the public or prevent the Architect from establishing a claim or defense in an adjudicatory proceeding" and replace them with the words "or unless the Owner waives such confidentiality in writing".

Paragraph 1.2.3.5. In the first line, between the words "and" and "consent" add the word "written".

Paragraph 1.2.3.7. At the end of the first sentence, add the following: "except when the Architect is aware of inaccuracy or incompleteness".

Paragraph 1.2.3.8. Add the following paragraph: "The Architect agrees to be bound by any and all obligations imposed upon it in the general conditions of the construction contract for the Project between the Owner and Contractor. (AIA Document A-201, as amended by the Owner's standard conditions)."

ARTICLE 1.3. TERMS AND CONDITIONS.

Paragraph 1.3.2.1. Delete the paragraph and replace it with the following: "All documents furnished to the Owner by the Architect pursuant to this Agreement, including but not limited to drawings, specifications and reports, including those in electronic form, shall become the sole property of the Owner upon the payment for the services incurred to produce such documents. However, the Architect does not warrant the suitability of such documents for any project other than the Project that is the subject of this Agreement, and if the Owner uses the documents for any other project, the Owner does so at its own risk."

Paragraph 1.3.2.2. Delete the paragraph in its entirety.

Paragraph 1.3.2.3. Delete the paragraph in its entirety.

Paragraph 1.3.2.4. Delete the paragraph in its entirety.

Paragraph 1.3.3.1. After the words "if mutually agreed in writing" in the third line, delete the remainder of the paragraph and replace it with the following: "However, changes in services shall only occur if the scope of the Project as described in the Owner's Request for Proposals for the Project is changed, it being the express intent of the parties that this Agreement provides for all compensation due the Architect for architectural services required to perform the Project."

Paragraph 1.3.3.2. Delete the paragraph in its entirety.

Paragraph 1.3.4.1. Delete the paragraph in its entirety.

Paragraph 1.3.4.2. Delete the paragraph in its entirety.

Paragraph 1.3.4.3. Delete the paragraph in its entirety.

Paragraph 1.3.5.1. Delete the paragraph in its entirety.

Paragraph 1.3.5.2. Delete the paragraph in its entirety.

Paragraph 1.3.5.3. Delete the paragraph in its entirety.

Paragraph 1.3.5.4. Delete the paragraph in its entirety.

Paragraph 1.3.5.5. Delete the paragraph in its entirety.

Paragraph 1.3.6. In the first line, delete the words "and the Owner" and change the word "waive" to "waives". In the second line, delete the word "mutual". In the third line, delete the words "either party's" and replace them with the words "the Architect's".

Paragraph 1.3.7.1. Delete the paragraph and replace it with the following: "This Agreement shall be governed by the law of the State of Virginia. Any action at law or suit in equity instituted as a result of the performance, non-performance or alleged breach of this Agreement shall be brought in the Circuit Court of Chesterfield County, Virginia and in no other jurisdiction."

Paragraph 1.3.7.3. Delete the last sentence of the paragraph.

Paragraph 1.3.7.7. Beginning on the fourth line, delete the words "if the Owner has previously advised the Architect in writing of the specific information considered by the Owner to be

confidential or proprietary.”

Paragraph 1.3.7.8. Delete the paragraph in its entirety.

Paragraph 1.3.8.1. Delete the paragraph and replace it with the following: “If the Owner fails to make payment when due to the Architect for services and expenses, the Architect may, upon seven days written notice to the Owner, suspend performance for services under this Agreement. Unless payment in full is received by the Architect within seven days of the date of notice, the suspension shall take effect without further notice. In the event of a suspension of services, the Architect shall have no liability to the Owner for delay or damage caused the Owner because of such suspension of services.”

Paragraph 1.3.8.2. Delete the last two sentences and replace them with the following: “When the Project is resumed, the Architect’s compensation shall be adjusted to provide for expenses incurred in the interruption and resumption of the Architect’s services”.

Paragraph 1.3.8.6. Beginning on the third line, delete the following: “and all termination expenses as defined in subparagraph 1.3.8.7”.

Paragraph 1.3.8.7. Delete the paragraph in its entirety.

Paragraph 1.3.9.1. Delete the second sentence.

Paragraph 1.3.9.2.3. At the end of the paragraph, add the following: “excluding reproduction for the office use of Architect and Architect’s Consultants”.

Paragraph 1.3.9.2.6. Delete the paragraph in its entirety.

Paragraph 1.3.9.2.8. Delete the paragraph in its entirety.

Paragraph 1.3.9.3. At the end of the second line after the words “shall be” insert the words “kept on the basis of generally accepted accounting principles and shall be”.

ARTICLE 1.5 COMPENSATION.

Paragraph 1.5.2. Delete the paragraph and replace it with the following: “If the services of the Architect are changed as described in paragraph 1.3.3.1, the Architect’s compensation for the changed services shall be as provided for in the Change Order.”

Paragraph 1.5.3. Delete the paragraph and replace it with the following: “For additional services of the Architect as described in the Owner’s Amendments to AIA Document B141-1997 Standard Form of Architect’s Services, but excluding services of Consultants, compensation shall be computed as follows:

[place description here]

Paragraph 1.5.3.1. Add a new paragraph 1.5.3.1 which provides as follows: “For additional services of Consultants as described in the Owner’s Amendments to AIA Document B141-1997 Standard Form of Architect’s Services, including additional structural, mechanical and electrical engineering or other services, a multiple of 1.2 times the amount reasonably billed to the Architect for such services.”

CHESTERFIELD COUNTY'S AMENDMENTS TO
AIA DOCUMENT B141 - 1997, STANDARD FORM OF ARCHITECT'S
SERVICES: DESIGN AND CONTRACT ADMINISTRATION

ARTICLE 2.1. PROJECT ADMINISTRATION SERVICES.

Paragraph 2.1.2. In the first line, delete the words "When the Project requirements have been sufficiently identified" and replace them with the words "Promptly after receipt of notice to proceed,".

Paragraph 2.1.7.1. In the first line, delete the words "When the Project requirements have been sufficiently identified" and replace them with the words "As soon as practicable after receipt of notice to proceed,". Delete the last sentence of the paragraph.

Paragraph 2.1.7.3. Delete the last sentence of the paragraph.

Paragraph 2.1.7.4. Delete the paragraph in its entirety.

Paragraph 2.1.7.6. At the end of the first sentence, insert the following: "Any such modification of the documents shall be subject to approval by the Owner and the Architect shall make all changes to the modifications required by the Owner without receiving additional compensation."

ARTICLE 2.2. SUPPORTING SERVICES.

Paragraph 2.2.1. In the first line, after the words "Paragraph 2.8.3" add the words "and Paragraph 2.2.1.1."

Paragraph 2.2.1.1. At the beginning of the first line, delete the words "The Owner" and replace them with the words "The Architect". At the end of line 3, add the following language "or, if the Owner elects to develop its own program, the Architect shall review and verify it."

ARTICLE 2.3. EVALUATION AND PLANNING SERVICES.

Paragraph 2.3.1. On the second line, after the words "The Owner's program", add the words "if provided by the Owner".

ARTICLE 2.4. DESIGN SERVICES.

Paragraph 2.4.1. In the first line, delete the word "normal" and replace it with the word "all". At the end of the paragraph, add the following words: "necessary to complete the Project".

Paragraph 2.4.1.1. Add a new paragraph 2.4.1.1., which states as follows: "The Architect shall provide all design documents to the Owner in an electronic format acceptable to the Owner, as well as in standard paper format."

ARTICLE 2.6. CONTRACT ADMINISTRATION SERVICES.

Paragraph 2.6.1.1. Delete the last sentence in its entirety.

Paragraph 2.6.1.2. In the last line, delete the number "60" and replace it with the number "_____".

Paragraph 2.6.1.4. Delete the paragraph in its entirety.

ARTICLE 2.8. SCHEDULE OF SERVICES.

Delete Article 2.8 and replace it with a new Article 2.8 titled "Additional Services", which consists of the following:

"Paragraph 2.8.1. General. The services described in this Article are not included in the services described in Articles 2.1 through 2.7 and the Architect shall be entitled to compensation for them pursuant to Articles 1.5.2 and 1.5.3 of AIA Document B141-1997 Standard Form of Agreement Between Owner and Architect, as amended by the Owner's Amendments. The services described in Paragraphs 2.8.2, 2.8.3, and all Subparagraphs of those Paragraphs shall only be provided if authorized or confirmed in writing by the Owner. If services described under Contingent Additional Services in Paragraph 2.8.4 and all Subparagraphs of that Paragraph are required due to circumstances beyond the Architect's control, the Architect shall notify the Owner before beginning such services. If the Owner believes that services described under Paragraph 2.8.4 and any Subparagraph of that Paragraph are not required, the Owner shall give prompt written notice to the Architect. If the Owner indicates in writing that all or part of such contingent additional services are not required, the Architect shall have no obligation to provide those services.

Paragraph 2.8.2. Project representation beyond the basic services.

Paragraph 2.8.2.1. If more extensive representation at the site than is described in Article 2.6 is required, the Architect shall provide one or more project representatives to assist in carrying out such additional on-site responsibilities.

Paragraph 2.8.2.2. Project representatives shall be selected, employed and directed by the Architect, and the Architect shall be compensated for such project representatives as agreed by the Owner and Architect. The duties, responsibilities and limitations of authority of project representatives shall be as described in the edition of AIA Document B352 current as of the date of this Agreement, unless otherwise agreed to by the Owner and Architect.

Paragraph 2.8.2.3. Through the project representatives, the Architect shall endeavor to provide further representation for the Owner against defects and deficiencies in the work, but the furnishing of such project representation shall not modify the rights, responsibilities or obligations of the Architect as described elsewhere in the Agreement.

Paragraph 2.8.3. Optional additional services.

Paragraph 2.8.3.1. Providing financial feasibility or other special studies.

Paragraph 2.8.3.2 Providing planning surveys, site evaluations, or comparative studies of prospective sites.

Paragraph 2.8.3.3. Providing special surveys and environmental studies and submissions required for approvals of governmental authorities or others having jurisdiction over the Project.

Paragraph 2.8.3.4. Providing services relative to future facilities systems and equipment.

Paragraph 2.8.3.5. Making measured drawings of such conditions or facilities and investigating existing conditions or facilities for the purpose of making measured drawings.

Paragraph 2.8.3.6. Verifying the accuracy of drawings or other information furnished by the

Owner.

Paragraph 2.8.3.7. Coordinating construction performed by separate contractors or by the Owner's own forces and coordinating services required in connection with construction performed and equipment supplied by the Owner.

Paragraph 2.8.3.8. Providing services in connection with the work of the construction manager or separate consultants retained by the Owner.

Paragraph 2.8.3.9. Providing detailed estimates of construction costs.

Paragraph 2.8.3.10. Providing detailed quantity surveys or inventories of materials, equipment and labor.

Paragraph 2.8.3.11. Providing an analysis of owning and operating costs.

Paragraph 2.8.3.12. Providing interior design and other similar services required for or in connection with the selection procurement or installation of furniture, furnishings and related equipment.

Paragraph 2.8.3.13. Providing services for planning tenant or rental spaces.

Paragraph 2.8.3.14. Making investigations, surveys, inventories of materials or equipment, or evaluations and detailed appraisals of existing facilities.

Paragraph 2.8.3.15. Preparing a set of reproducible record drawings showing significant changes in the work made during construction based on marked up prints, drawings and other data furnished by the Contractor to the Architect.

Paragraph 2.8.3.16. Providing extensive assistance in the use of equipment where systems such as initial startup, testing, adjusting and balancing, preparation of operation and maintenance manuals, training personnel for operation and maintenance and consulting during operation.

Paragraph 2.8.3.17. Providing services after issuance to the Owner of the final certificate for payment, or in the absence of the final certificate of payment, more than _____ days after the date of substantial completion of the work.

Paragraph 2.8.3.18. Providing services of consultants for other than architectural, structural, mechanical and electrical engineering portions of the Project provided as a part of basic services.

Paragraph 2.8.3.19. Providing any other services not otherwise included in this Agreement or not customarily furnished in accordance with generally accepted architectural practice.

Paragraph 2.8.4. Contingent additional services.

Paragraph 2.8.4.1. Making revisions to drawings, specifications or other documents when such revisions are (1) inconsistent with approvals or instructions previously given by the Owner, including revisions made necessary by adjustments in the Owner's program or Project budget; (2) required by the enactment or revision of codes, laws or regulations after the preparation of such documents; or (3) due to changes required as a result of the Owner's failure to render decisions in a timely manner.

Paragraph 2.8.4.2. Providing services required because of significant changes in the Project

including, but not limited to, size, quality, complexity, the Owner's schedule or the method of bidding or negotiating and contracting for construction.

Paragraph 2.8.4.3. Preparing drawings, specifications and other documentation and supporting data, evaluating Contractor's proposals, and providing other services in connection with change orders and construction change directives.

Paragraph 2.8.4.4. Providing services in connection with evaluating substitutions proposed by the Contractor and making subsequent revisions to drawings, specifications and other documentation resulting therefrom.

Paragraph 2.8.4.5. Providing consultation concerning replacement of work damaged by fire or other cause during construction, and furnishing services required in connection with the replacement of such work.

Paragraph 2.8.4.6. Providing services made necessary by the default of the Contractor, by major defects or deficiencies in the work of the Contractor or by failure of performance by the Contractor under the contract for construction.

Paragraph 2.8.4.7. Providing services and evaluating an extensive number of claims submitted by the Contractor or others in connection with the work.

Paragraph 2.8.4.8. Providing services in connection with a public hearing or legal proceeding except where the Architect is a party thereto.